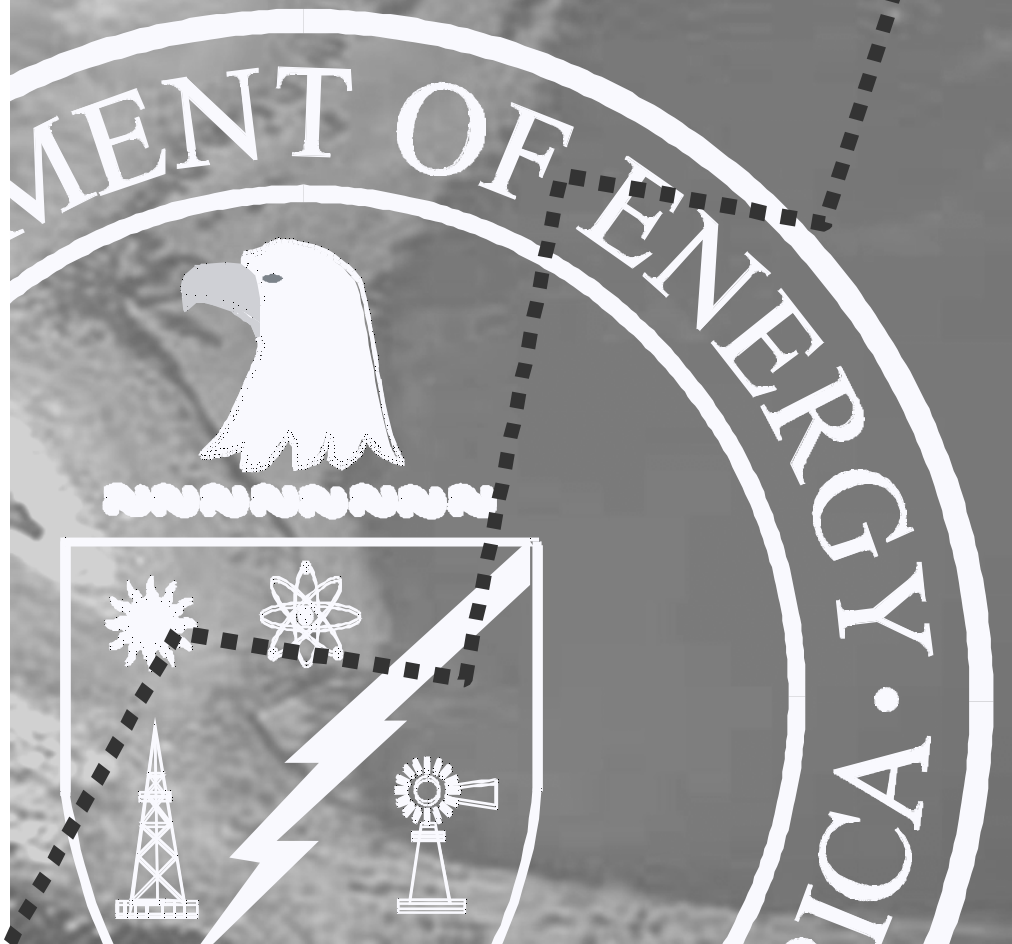


U.S. Department of Energy

Office of Management, Budget and Evaluation

Integrated Project Teams



Initiated by: Office of Engineering and Construction Management

INTEGRATED PROJECT TEAMS

1.0 INTRODUCTION

1.1 Overview

This Practice is intended to assist the project director (PD) and project manager (PM) and the supporting acquisition community in selecting and developing high-performing Integrated Project Teams (IPTs).

1.2 Background

Integrated Project Teams are mandated by Department of Energy (DOE) Order 413.3 and DOE Manual 413.3-1. The Order directs that “all acquisition programs and projects shall use an integrated project team approach to managing projects.” In fact, DOE recognizes the IPT as the core of project management implementation—where PDs integrate all essential acquisition activities through the use of multi-disciplined teams, from requirements definition through production, fielding/deployment, and operational support in order to optimize design, manufacturing, business, and supportability processes. As a result, overall project performance can be maximized rather than the performance of individual functional areas. During the project life cycle, IPTs will change in membership. Many different IPTs can be chartered during a project including a contractor IPT led by the PM as well as IPTs for specific tasks or deliverables.

In further emphasizing the importance of project management techniques and the use of IPTs in the implementation thereof, the implementing instruction for systems acquisition policy, DOE Order 413.3, directs PDs to ensure design activities implement procedures necessary to concurrently develop products and their associated processes. Development efforts will result in an optimal product design and associated manufacturing, test, and support processes that meet the user’s needs.

The new DOE directive consciously avoids prescriptions for setting up and operating IPTs, recognizing a no “one-size-fits-all” approach. DOE intends to encourage flexibility, innovation, and tailoring in executing the IPT concept; it does not want to mandate organizational structures, procedures, or formats. DOE does, however, emphasize three basic tenets to be adhered to when structuring IPTs: (1) the PD is in charge of their own project; (2) IPTs are responsible to and empowered by the PD; and (3) communication between IPTs, the PD, the Program Manager and all levels of acquisition is encouraged to exchange information, build trust, and resolve issues—ideally at the lowest possible level.

2.0 POLICY

The Department of Energy has adopted IPTs as the preferred approach for development, review, and oversight of the acquisition process. The IPT process facilitates decision-making by making decisions and recommendations based on timely input from the entire team, and replaces the lengthy, longstanding sequential review and approval process. The operating concept uses IPTs to manage assigned projects from Initiation through Transition/Closeout. Over each project's life cycle, the structure, size, and skills mix of the IPT evolve to best meet the project's needs.

As projects proceed through the acquisition process toward Critical Decisions or reviews, each project will establish and implement an IPT. As appropriate, the IPT is to be chartered and staffed in parallel with the Mission Need Statement. In addition, in all cases, the IPT includes a representative from the contracting function; this may be a Contracting Officer or Contracting Officer Technical Representative (often the PD).

2.1 Policy Guidance

IPTs are an integral part of the DOE acquisition oversight and review process. DOE Order and Manual 413.3 directs that the Department perform as many acquisition functions using IPTs, as possible, including oversight and review.

2.2 Project-Level Integrated Project Team Procedures, Roles and Responsibilities

The Program Manager and/or PD or designee, organizes and leads an IPT to support the development of strategies for acquisitions, contracts, cost estimates, evaluation of alternatives, logistics management, cost-performance tradeoffs, etc. While there is no one-size-fits-all IPT approach, there are three basic tenets to which any approach should adhere:

- The PD is in charge of the project
- IPTs are advisory and implementation bodies to the PD
- Direct communication between the project office and all levels in the acquisition oversight and review process is expected as a means of exchanging information and building trust.

The leader of each IPT is usually the PD/PM or the PD's/PM's representative. The following roles and responsibilities apply to all IPTs:

- *Support the PD/PM.* The most important activity the IPT can perform to assure the success of a project is to support the PD/PM. This includes accepting and performing assignments, recognizing the IPT as their prime responsibility, and (if possible) remaining on the IPT for the duration of the project.

- *Develop Acquisition Planning.* The IPT should be involved in the development, preparation and issuance of an Acquisition Strategy, including obtaining the necessary reviews, and approvals. Long-range planning is also performed including identifying long-lead procurements, needed Project Engineering and Design funds, budget planning and annual budget requests, necessary permits and licenses, and required National Environmental Policy Act documentation.
- *Define project baselines.* As appropriate, participate in developing project scope, schedule, and cost baselines, and associated Key Performance Parameters, Key Schedule Parameters, and Key Cost Parameters. Assist in monitoring project progress against baselines and Key Performance Parameters, identifying problems and potential problems, and recommend and support appropriate corrective actions.
- *Identify project interfaces.* Participate in identifying, documenting, and controlling all project interfaces with other DOE sites, other projects; facilities and utilities; other organizations; and contractors, subcontractors, suppliers, and vendors.
- *Prepare project documents.* Plan, and as appropriate, prepare project supporting documents including the Project Execution Plan (PEP); high-level functions and requirements; conceptual cost and schedule ranges; project procedures; alternative studies; and project data sheets (design/construction).
- *Project status.* Maintain a continuing knowledge of the project's status against established goals, objectives, and milestones, particularly in those areas of project responsibility. Identify existing and potential problems and recommend corrective actions. Compare individual observations against reported status.
- *Project reporting.* Review project reports for content, problems, and possible corrective action items. Also review all Critical Decision submittal requests for completeness and content. Make recommendations for corrective action.
- *Project reviews.* Attend project reviews to obtain current information on project status and progress. Evaluate and verify concerns, and keep the PD/PM informed. Based on technical knowledge and background, participate in project design reviews and provide appropriate and timely comments.
- *Change control.* Review all project change requests for validity, value added, timeliness, need and impacts. As requested, meet with the project change control board to review and approve/disapprove change requests.
- *Operational Readiness Review and Assessments.* As appropriate, plan, organize, and perform the project's Operational Readiness Review. Assure Operational Readiness Review planning begins sufficiently early to assure project documents, records, reviews, etc., are identified and available for review when necessary and in an organized form. Identify Operational Readiness Review Team needs, and help assure those needs are met.

Assure the responsible contractor(s) performs a meaningful management oversight/review prior to the Operational Readiness Review.

3.0 OPERATING PRINCIPLES FOR IMPLEMENTING INTEGRATED PROJECT TEAMS

IPTs will function in a spirit of teamwork with participants empowered and authorized, to the maximum extent possible, to make commitments for the organization or the functional area they represent. IPTs are composed of representatives from all appropriate functional disciplines working together to build successful projects, and enabling decision-makers to make the right decisions at the right time. Adherence to the following six guiding principles has been demonstrated as necessary to ensure a high-performance IPT.

3.1 Chartering, Launch, Initiation

Getting an IPT organized and functioning is critical. Key activities include preparing an IPT charter, conducting IPT training, preparing a plan of action, and identifying milestones. When combined, these activities contribute to early and sustained success.

The IPT charter documents the mission and product of the IPT, and establishes the timeframe in which the effort is to be completed. It should be drafted by the PD/PM, ratified by the membership at the outset of the IPT, and approved by the responsible executive leader. A charter embodies the three basic tenets of an IPT (see Section 2.2), and identifies the roles and responsibilities of the IPT. It also embodies the six operating principles for success-oriented IPTs enumerated in this section (see Section 6.2). Table 1 provides some considerations for an IPT charter.

Similarly, training conducted soon after IPT formation contributes significantly to success. While some participants may have extensive experience with the IPT process, others could be participating in IPTs for the first time. Training that focuses on the principles and recommendations articulated in this guide establishes a common baseline for IPT operation, identifies the roles of members, and provides a common understanding of the mechanisms essential to success.

The plan of action, including milestones, provides a detailed understanding of key IPT activities, target dates, and deliverables. It is a simple management tool that complements the IPT charter and clearly and graphically communicates critical IPT objectives and the processes that will be used to achieve them.

Together, chartering an IPT, training participants, and preparing a plan of action that includes milestones provides the solid foundation from which IPTs are successfully launched.

Table 1. Considerations for an IPT Charter

A charter should:

- Contain a clear mission statement, to include the specific purpose and objectives of the IPT;
- Provide recognition of the purpose of the IPT in a larger context;
- Identify the product, process, or service to be provided;
- Identify the customer or recipient of the product, process, or service;
- Identify the timeframe by which the product is to be produced, the process completed, or the service provided;
- Identify IPT membership, to include all the cross-functional disciplines necessary to achieve the objectives of the IPT and to produce the product, complete the process, or provide the service;
- Consider any need for training of the IPT members, particularly those new to the IPT process;
- Address membership performance objectives that characterize high-performance IPTs;
- Address product ownership and membership accountability and responsibility;
- Address the use of metrics as a means of creating and maintaining team focus;
- Provide for membership coordination and communication;
- Embody:
 - (a) The three basic tenets of IPTs;
 - (b) The roles and responsibilities applicable to all IPTs; and
 - (c) The six operating principles for implementing success-oriented IPTs;
- Be approved by appropriate authority;
- Provide for its own periodic review for adequacy, currency, or rescission.

A charter may:

- Provide for performance feedback to cross-functional members' supervisors;
- Provide recognition that team composition may change over time, while maintaining a necessary core composition;
- Provide for a member recognition program that characterizes high-performance IPTs.

A charter should not: be unduly lengthy.

3.2 Goal Alignment

The PD/PM should ensure the goals and objectives of team members are consistent with project goals and objectives. An effective mechanism to provide performance feedback to team members and their functional organization should be established. Where feasible, feedback on performance should be provided to the individual's supervisor, as well as the team member. Individual recognition contributes to the development and success of high-performance IPTs.

3.3 Open Discussions

Each member brings to the team unique expertise that needs to be recognized. Because of that expertise, each person's views are important in the overall development of a successful project, and these views need to be heard. Teams need full and open discussions with no secrets. Full and open discussion does not mean that the team must act on each view, but all facts must be available for each team member to understand and assess. Cooperation is essential.

The team is not searching for "lowest common denominator" consensus. There can be disagreement on how to approach a particular issue, but that disagreement must be reasoned

disagreement, based on an alternative plan of action rather than unyielding opposition. Issues that cannot be resolved by the team must be identified early so that resolution can be achieved as quickly as possible at the appropriate level.

A sense of ownership on the part of the IPT members is key to the success of the IPT process. Ownership is a collective concept. All IPT members must feel that their contributions are important to the process and are considered. Decisions and documents should be a product of the Team.

3.4 Empowered, Qualified Team Members

Empowerment is critical to making and keeping the agreements essential to effective IPTs. All representatives assigned to IPTs at all levels are to be empowered by their leadership, and able to speak for their superiors, the “principals,” in the decision-making process. IPT members cannot be expected to have the breadth of knowledge and experience of their leaders in all cases. However, they are expected to be in frequent communication with their leaders, and thus ensure that their advice to the PD/PM is sound and will not be changed later, barring unforeseen circumstances or new information.

Principals should not overturn commitments made by their representatives (IPT members) as long as those commitments were made within the limits of the IPT member’s empowerment. One of the key responsibilities of leaders is to train and educate staff so they have the required knowledge and skills to represent their organization. Specifically, qualified members must be professionals who are:

- Current in their functional area
- Knowledgeable in the mission and organization they represent
- Educated and trained in the use of and participation in IPTs.

IPT members should inform other team members and the PD/PM of any limits in their ability to speak for their principals. IPT agreements cannot be binding if they exceed the limits of a member’s empowerment. Staff representatives seek direction from their superiors on the limits of their authority and make recommendations only within those limits. Staff superiors will enhance staff effectiveness by granting the greatest possible authority.

When issues arise that exceed the limits of empowerment, the PD/PM or IPT leader allows members adequate time to coordinate issues and positions with their principals. This continuous “up-the-line” communication should ensure no surprises later when the principals are asked to coordinate, review, or approve a final draft document or decision.

The IPT leader should stress at the outset that agreements reached in the IPT are binding. An exception to this general rule would be the rare case where new information becomes available

after agreements have been reached, and such information is significant enough to warrant a review of prior agreements.

3.5 Dedicated/Committed Proactive Participation

Consistent team participation by people with institutional knowledge of the functional areas is necessary for success. Therefore, IPTs should be organized to allow all stakeholders to participate. Membership should be limited to the minimum necessary to enhance communication and trust. Participation should be by the principal member, and the use of accompanying support staff is specifically discouraged and undesirable. Other organizations may be added to the IPT as required based on the needs of the project. Contractor participation is appropriate and is to be in accordance with guidance in FAR/DEAR.

3.6 Issues Raised and Resolved Early

Team members should openly raise and discuss issues at the earliest possible opportunity. The IPT should try to resolve issues within the team, seeking additional functional expertise when necessary. In the spirit of teaming and cooperation, issues should not be worked “off-line” beyond the purview of the IPT. In instances where outside discussion facilitates the education of a member, such activity is encouraged. However, all issues should be raised, discussed, and resolved within the team context. When an issue cannot be resolved within the IPT, the PD/PM should raise the issue as quickly as possible to a decision-making level where resolution can be achieved. The objective is to achieve agreement and resolve issues rapidly at the lowest possible level, without hindering project progress.

4.0 IPT STRUCTURE

Though IPT structures vary to suit the task, all IPTs are customer-oriented, product-focused, multidisciplinary groups sharing common goals, which evolve appropriately with the project timeline. The members are individually empowered to make decisions within well-defined bounds, as is the IPT collectively. The IPT and its members are mutually and individually responsible to the Acquisition Executive and/or PD for execution of the project within allocated resources, and to the competency leadership for adherence to approved policies and processes. This is a significant point. The responsibility for successful project execution and authority to make tradeoff decisions rests within the IPT, not the competency leadership or site leadership. Competency leadership involvement is oriented to process development and improvement, assignment of personnel to teams (via a Team Assignment Agreement or some other written documentation), professional training and coaching of personnel assigned to IPTs, and monitoring methods to assess process responsiveness and effectiveness, personnel performance and facility capabilities. The IPT structure is product-focused, not competency- or site-specific, so organizational or geographic location of the individual IPT members becomes

less important. The IPT concept leads to project-optimized decisions in a timely manner, with concurrent involvement of all affected disciplines.

4.1 Team Leadership and Team Member Responsibilities

The PD/PM is the overall project team leader. Their planning-horizon responsibilities, however, extend beyond any individual's tenure, and form the basis for competency planning and life cycle management within their IPTs. The following paragraphs discuss the leadership responsibilities of the IPT leader, as well as the responsibilities of IPT members.

Integrated Project Team Leader Responsibilities

Section 4.1 outlined the mission, functions, and responsibilities of the PD/PM in executing life cycle management for their project. In addition to these project responsibilities, the PD/PM, as the leader of the project team, is responsible for:

- Preparation and maintenance of team charters and IPT and project procedures
- Providing the IPT with broad guidance, and delegating decision-making authority and limitations of authority to each IPT
- Providing allocated budget
- Maintaining a project environment that rewards team success
- Serve as the IPT leader
- Providing needed orientation and training for personnel assigned to the team
- Keeping management and stakeholders informed.
- The day-to-day performance of the IPT, and providing inputs to the functional leaders for assigned team members' annual performance appraisals
- Ensuring that decision making within the team is not dominated by one functional area
- Speaking for the team, communicating project requirements to the membership and resource requirements to the Acquisition Executive and functional leaders.

PD's/PM's should have a broad knowledge of the project, product and cross-functional interdependence, and possess the interpersonal skills to foster teamwork and motivate the team to success. In most cases, the PD/PM is not the supervisor of the team members. The PD/PM guides, coaches, and encourages the team's progress and performance, and will provide an input to the members' competency manager regarding the participant's performance. The PD/PM will also cooperate with functional managers and release team members for professional training when appropriate. Ideally, professional training needs will have been negotiated and agreed upon as part of the team assignment agreement process. Ultimately, the PD's/PM's main focus remains on project success.

Team Member Responsibilities

Team members will be drawn from all functional areas that affect the scope, cost, schedule, or performance of the project. Depending on the relative impact of a functional area, team membership may be either full-time or part-time. Team members are trained and assigned to teams by their competency to execute standard processes and exercise technical and/or business judgment within established policies in support of the assigned project.

Team members are responsible to their functional or discipline leaders (i.e., process design, quality assurance, safety, legal) for the integrity, quality and objectivity of their work, and for compliance with established policies, processes, and best practices. The team members are responsible to the team leaders for (see Section 2.2):

- Taking ownership of the IPT's charter, goals, and objectives
- Supporting project cost, performance, schedule, and quality objectives
- Identifying and meeting commitments
- Maintaining communication with their respective functional managers.

4.2 Empowerment

Empowerment is essential to the efficient and productive operation of IPTs. It permits PDs/PMs to focus on long-range issues, increases the management and leadership experience of people, and increases the team's productivity. Empowerment of the IPTs requires positive action by the Acquisition Executive, the Program Manager, the PD, and the functional leaders.

The functional leaders should train their people with the skills necessary to effectively operate within the bounds of their IPT assignment. They are to instill in them the expectation that, while on an IPT, they will provide the PD/PM with their best professional efforts, skillfully employing their functional expertise, common processes and experience to ensure project success and customer satisfaction. The functional leaders also ensure that the IPT member understands the practical limits of their knowledge and authority, keeps their functional manager informed, and accesses the extended resources of the functional area when those limits are surpassed. Such considerations should be evaluated when personnel are being considered for assignments requiring collocation, as discussed in Section 4.3.

The PD/PM works with the IPT to understand their strengths and, through team building, forges a bond of trust and confidence with the IPT. The PD/PM provides effective leadership, program direction and management guidance sufficient to permit the IPTs to efficiently translate guidance into executable plans. The PD/PM should also delegate discipline authority to the IPT functional members. These authorities should be clearly transmitted and documented.

4.3 Collocation

Collocation involves physically locating certain key members of a project team in an office, either with, or in close proximity to the PD/PM. IPT members should be collocated to the maximum extent practical to facilitate the most effective communication within a team. However, there will be practical limits to collocation such as available space, scope and breadth of team membership, duration of the task, security, facility access, and availability of communications tools. For example, limitations may apply to IPT members from other sites for short-term assignments, or when a single competency representative serves more than one IPT. When collocation is not possible, frequent (daily) communication is established between the members through meetings and electronic means.

5.0 HOW INTEGRATED PROJECT TEAMS OPERATE

Establishing and executing high performing IPTs require skilled leaders and an organizational culture that exhibits openness and trust among its members. A typical IPT process model is illustrated in Figure 1 and defined by a four step process:

- *Opportunity Identifier Need.* An opportunity is identified that requires IPT resolution or assistance. Key stakeholders are identified and a systematic process of developing a clear charter with outcome expectations is defined. The team members are assigned by the PD/PM to resolve the opportunity at hand.
- *Execution.* Working as an IPT, team members prepare a plan to fully develop and address issues. Most issues should be discussed and resolved within the IPT environment. When issues cannot be resolved, problems are escalated for senior management intervention.
- *Delivery.* As issues are resolved and the plan executed, the IPT completes and delivers its chartered outcome requirements.
- *Reevaluation.* Upon delivery and review with the PD/PM, the IPT provides necessary feedback to IPT members and evaluates the need for continuation of the IPT. If requirements are fulfilled the IPT is disbanded.

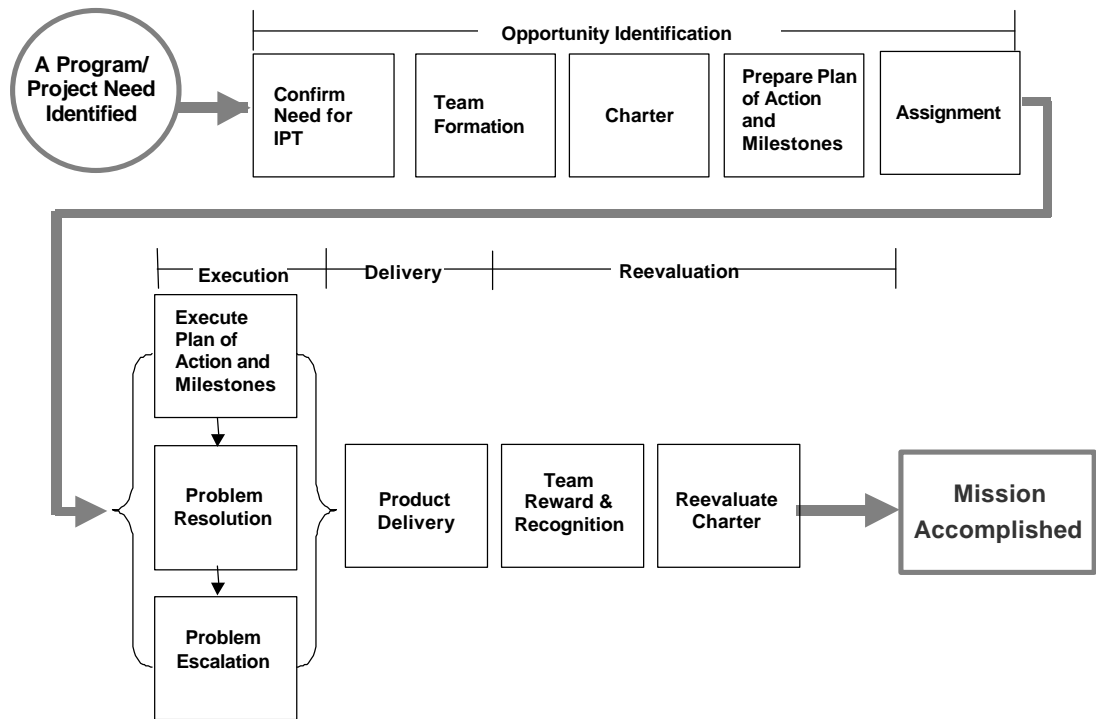


Figure 1. IPT Process Model

IPTs are not intended to solve every problem and should be distinguished from meetings. IPTs are focused on building successful acquisitions, but not all issues for resolution or assigned actions require convening an IPT. For example, IPTs may be used to develop affordable and executable strategies and plans, identify and resolve issues early, and provide continuous early insights to the PD/PM. There is a need to make sure that the IPT philosophy does not become a fad, in order to productively use personnel resources, especially in today's downsizing environment. IPTs should be considered when there are requirements:

- For multi-functional expertise;
- To address multi-faceted, complex situations or issues;
- To address issues concerning the balancing of cost, schedule, or performance;
- To have clear objectives.

Once an IPT is launched and senior leadership is engaged, the IPT begins its operation. For success, it is essential that adequate time be established to develop and implement the toolkit material found in Section 6.

As products are delivered, it is imperative that the PD/PM and the IPT reevaluate its charter for continuing need and currency.

5.1 Forming IPTs

The IPT is a PD's total team in terms of human resources. New project teams are initiated when directed by the appropriate Acquisition Executive or Program Manager. In terms of personnel resources, the requisite "buy-in" by the Competency Leaders will be an important part of the decision to initiate a new IPT. This section addresses how a Program Manager and staff go about formulating the hierarchy of IPTs, which are sub-sets of the program team.

Figure 2 illustrates the typical steps associated with forming IPTs. Step 1 is particularly important in that it includes the creation of IPT charters. Charters lay out the boundaries of IPT authority, and other Program Manager expectations.

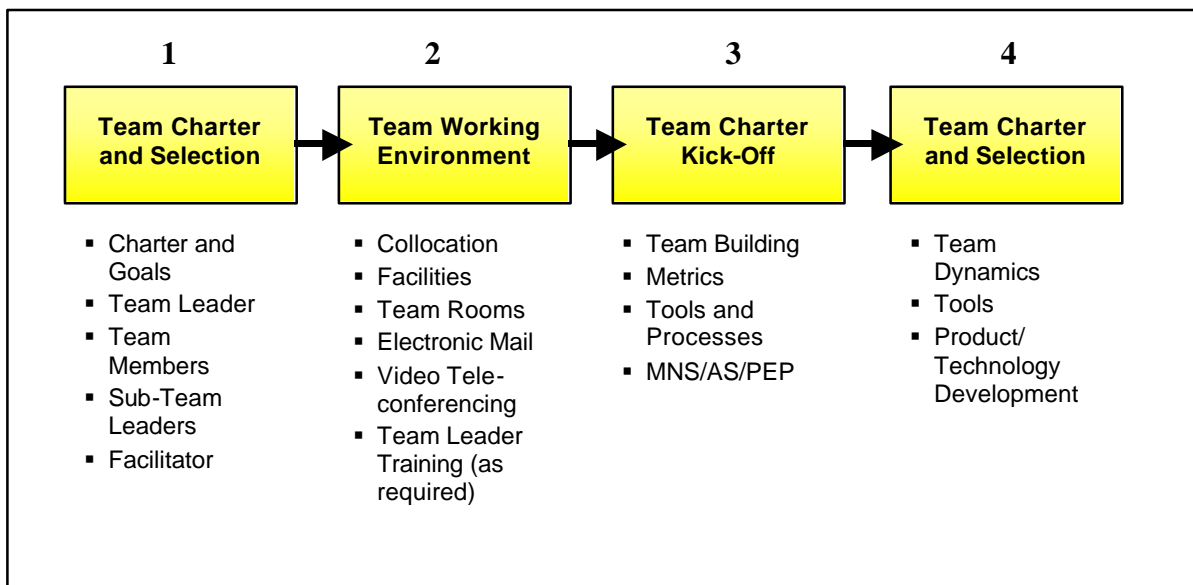


Figure 2. Steps In Forming IPTs

Membership should be geared to that portion of the life cycle of immediate concern to the IPT's charter, but should also draw from outside the project as appropriate to engage this requisite expertise early in the project.

In the event that contractor support is considered necessary, it will normally be provided by the functional leader. If the PD and the functional leader mutually determine that the functional area is unable to meet a particular demand, the option is available for the PD to provide their own contractor support. However, first consideration should always be given to the functional area to provide the support. If it is deemed necessary for the PD to provide the required contractor support, the PD and the functional leader must work together to insure that all contractor personnel adhere to established processes. It is important that the functional leader and the PD collaborate fully to insure a successful program. The functional leader also needs to maintain an awareness of the extent to which the customer has a demand that it cannot meet and the approach used as an alternative.

5.2 Selection of IPT Leaders

All IPTs are to have a leader. Team leadership may come from any competency and, although unlikely, could change over the life cycle of the project, depending on the primary focus of the project at a given time. It is generally the PD/PM who serves as the IPT leader, guiding the day-to-day performance of the team. The IPT leader also provides evaluations and administrative coordination with the competency on team members; responds to higher-level teams and competency managers on behalf of the team; and ensures that the operations of the team conform to policy and general guidelines in manuals such as this.

IPT leaders should have a broad technical knowledge of the product and understand how the different elements of the IPT, industry, DOE, and other DOE components contribute to successful acquisition and life cycle management. The team leader should also possess the ability to apply the unique interpersonal and planning acumen—acquired through prior experience and/or through leadership training—that is necessary to guide a highly skilled, diverse IPT.

The Acquisition Executive or the Program Manager normally designates IPT leaders. In selecting IPT leaders, there are two extremes related to the way leaders can delegate authority to other team members. One is where the leader maintains total responsibility and authority, and uses the team members as resources to execute their plans. The second is where the leader delegates virtually all the authority to the team members and views their role as simply reporting to higher management. IPT experience has shown that neither of these extremes has produced the best results. The best results have come when the team's leader reflects the following characteristics:

- Is an effective communicator
- The catalyst for all team performance
- Inspires a vision of what could be
- Encourages innovation
- Has a broad knowledge of the product or service
- Accepts responsibility for team decisions
- Is a consensus builder.

5.3 Team Work Plans

The IPT Charter drives the Team Work Plan process for the project. The Team Work Plan is the funding and execution document for an IPT. It ties money to specific tasks. Where the IPT Charter is a broad commission, the Team Work Plan lists hard products and/or services. The Team Work Plan is the means through which a PD/PM, using a work breakdown structure,

secures an audit trail from the major system to the smallest product or service, and back up again.

The Team Work Plan is intended to be the primary management tool used to organize, control, and maintain accountability for technical work being performed by IPTs. It will document a project team's resource requirements (e.g., personnel, special facilities, test assets, etc.) and the level of commitment of each competency to supply those resources, as well as the level of funding to be provided by the Acquisition Executive for direct funded resources. It will state the work to be done for funding assigned.

The goal for IPT members is to be full-time and collocated when practical. Fractionally distributing a member across two or more IPTs should be an exception; however, this may be required in cases where the project either does not need, or cannot afford, a full-time person. Also, when a member's team assignment(s) is reviewed annually, every effort should be made to keep a member with his or her present IPT, for the sake of continuity. This, of course, assumes that their performance is acceptable to the IPT leader(s), and a continuing requirement for the team member's expertise exists.

5.4 Operating an Integrated Project Team

Integrated Project Team Administration

When an IPT member is collocated and full-time, the member remains responsible to their functional manager for administrative matters. This does not relieve the IPT member or the functional manager of the responsibility to work with the IPT leader on administrative matters of importance to the member's participation on the team. These clearly include leave, training, work schedule, and travel.

The IPT/competency arrangement depends on the ability and willingness of the IPT member, IPT leader, and competency manager to share scheduling information and to quickly resolve conflicts. Impasses should be rare, and conflicts resolved at the lowest possible level. However, if such an instance occurs, the problem will be documented by a memo, and elevated up the project functional chain of command.

Note: Conflicts should be settled at the lowest level possible. Teams pursue every avenue "horizontally" across the organization before going "vertically" up the chain of command.

Conflict Resolution

This same process will be used for any intractable disagreement between the competency manager and the IPT leader. For example, disagreements may arise regarding the qualifications of a candidate team member, or the competency's approach to satisfying the IPT's resource requirements. These issues should be addressed at the lowest level at which resolution can be reasonably expected. For example, in the event an IPT staffing disagreement cannot be

resolved, the PD should seek recourse with the competency manager (Department Head or Assistant Department Head) first, then, if necessary, with the Program Secretarial Officer and the functional leader. The use of a memo formally documenting the problem for resolution by higher management in the program and competency chain is a last resort. See Section 5.7 for more information on resolving conflict.

5.5 Integrated Project Teams Conducting Business

Communications

Everyone recognizes the importance of clear, two-way communication. That importance is maintained, if not increased, when operating within the concept of IPTs. Collocation will have a very positive benefit on IPTs and their ability to communicate efficiently. On the other hand, many IPT members may, by necessity, be geographically separated. This presents challenges to the PD/PM and the IPT. Fortunately progress in electronic communications helps make this situation more manageable. Extended use of e-mail, video teleconferencing, and networked databases are just a few of today's capabilities that should be exploited. However, collocation should be considered a top priority.

As Information Management efforts evolve, IPTs should have access to, and build applications from, warehouses of corporate information. IPTs should also use their access to the Internet to conduct working sessions and share information. IPTs should also routinely use networked workstation voice and video. These capabilities are being developed as part of the overall approach to information management.

Continuous, free-flowing, and interactive communications among IPT members and the PD/PM is crucial.

Managing Assigned Work

The PD/PM and the IPTs are responsible for the success of a project. The way assigned work is managed is a key factor in achieving that success. IPTs manage cost, schedule, and technical performance for their assigned products and/or services. In doing so they strive for what is best overall for the IPT's customers, as opposed to what may be best for individual functional areas. The IPT forges strong internal partnerships, based on trust, and develops the competencies to make this work.

In planning and managing schedules, IPTs need to maintain the proper balance between optimism and achievability. The importance of monitoring and maintaining schedules is always stressed; however, primarily focusing on events will do this. Event-driven planning is the process of identifying the activities that must be achieved to execute the project. Each event is defined by a set of accomplishment criteria. Nearly all activities should be event-driven, as opposed to time- or date-driven. Date- or time-driven planning differs from event-driven planning in that it over-emphasizes schedule and requires that plans adjust to meet the

schedule. This often results in delaying work without proper regard for the increased risk. Whenever possible, event-based, computer-networked schedules should be available and used by all appropriate team members. Where contractually appropriate, Earned Value Management System schedule information is used as a primary earned value management tool, and reported in accordance with current policies. Earned value management should be used to monitor work done in-house in support of the project.

Work associated with technical performance is invariably dominated by managing requirement/design tradeoffs, and overall risk. Sensible requirements/design tradeoffs, while always an ongoing process, usually need to be accomplished as early as possible to preclude adverse impacts. Managing technical risk is a concept that takes many forms in its implementation. Fundamentally, it is accomplished by identifying risks to the product or process as early as possible, and implementing effective abatement measures that either (a) eliminate the risk, (b) introduce control measures to satisfactorily bound the adverse implications, or (c) capture sufficient resources to execute alternative plans. IPTs are responsible for accomplishing these tasks, and may do so using the risk management techniques that best suit their circumstances. However, most good risk management programs have the following characteristics:

- The risk management process is well-planned and documented.
- The process is proactive, meaning the IPT constantly looks ahead to find and deal with their problems.
- Initial assessments are periodically revisited to validate earlier conclusions.
- There are well-defined evaluation criteria to help distinguish success from failure.
- Ongoing results are documented and made available to all appropriate IPT members.

5.6 Interacting with Contractors

While teamwork and striving for win-win outcomes between Government and industry is imperative, it is important to maintain the distinction between Government responsibilities and those of industry. IPT members should always accomplish the customary Government work, such as writing Acquisition Strategy Documents, conducting source selections, etc. Where a contract exists with industry, IPT participation as a resource, and not as oversight, is equally as important as the industry counterpart's responsibility to maintain cost, schedule, and technical performance. While customer/product focus of the IPT is essential, this should not be allowed to undermine sound contracting procedures.

5.7 Resolving Integrated Project Team Problems

A key strength of IPTs is their ability to effectively resolve technical and project problems in a timely way. IPTs, empowered by the PD/PM and functional manager(s), use their experience and judgment in evaluating and reaching decisions. They approach each and every problem

with a keen sense of what is most important to their product and customer. However, there are many areas common across projects in this regard, the most important of which are addressed below.

Routine Consensus Building

Depending on the life cycle of a project and the specific IPT structure employed, “routine” matters may differ substantially between projects. What is being addressed are those matters where a particular IPT, through its make-up and overall experience level, is well suited to deal with the question(s) at hand.

In these cases, the PD/PM encourages team members to identify all relevant facts. Open, two-way communication ensues, throughout which the PD/PM is particularly conscientious in drawing out all relevant facts and opinions. Using the ultimate criteria of what is best for the product and customer, the PD/PM guides the team towards a consensus all members can support. The judgment of the PD/PM is critical in this process in a number of ways. First, the PD/PM ensures all team members, not just the more vocal ones, have the opportunity to participate and express their opinions. Second, the PD/PM takes note of whether the decision reached represents a strong or a weak consensus. In the case of the latter, the appropriate members of the IPT with a more senior status must understand the situation, so that if factors change, earlier decisions can be revisited if necessary. And third, the PD/PM is particularly sensitive to minority opinions. The process should in no way be viewed simply as “majority rules”; minority opinions should be adequately explored and considered, for experience has shown us that they sometimes provide the best solution.

Resolving Conflict

There may be times, however infrequent, when PD/PMs are unable to forge a consensus within the IPT on a particular matter. An example might be where several team members, backed by technical functional leadership, feel strongly that a technical compromise under consideration is unacceptable for reasons of long-term product integrity. These cases are particularly challenging to the PD/PM and require all their experience, maturity, and judgment. Handled correctly, the conflict can actually be a positive reinforcement of the process and enhance the sense of “team.” Handled incorrectly, the conflict can become a divisive factor and damage the team’s ability to interact effectively.

The key to resolving conflict is the general acceptance by all team members that their overarching objective is to do what’s best for their project and customer. With this common understanding, the issue at hand becomes more manageable, in that it is more clearly a matter of “means” rather than “motivation.” Equally important is the way the PD/PM deals with the conflict. It is rarely, if ever, appropriate for a PD/PM to make a unilateral decision in the absence of a team consensus. Briefing the issue to higher authority for guidance is normally best in this situation.

6.0 TOOLKITS

This section provides the following aids to assist PD/PMs in developing and managing effective IPTs:

- Guidelines for Meeting Management
- Best Practices Checklist
- Meeting Management Checklist
- Effective Characteristics of IPT Participants
- DOE IPT Skill and Knowledge Requirements.

6.1 Guidelines for Meeting Management

The PD/PM should clearly articulate the IPT's focus at the outset of the meeting. Examples of a specific focus may be to prepare for a decision milestone, to develop and reach agreement on a proposed acquisition strategy, or to resolve a specific issue or set of issues.

Orienting the Team Members

To ensure that all IPT members have a common understanding of the situation, the PD/PM should provide an issue overview briefing at the beginning of the meeting. Before the first IPT meeting, the PD/PM should develop a proposed IPT strategy, documentation requirements, and IPT structure. These proposals are refined by the IPT and proposed to the user. The PD/PM will proceed based on the user's agreement. Any disagreements follow the issue resolution process developed by the IPT. IPT members are to discuss and agree to a meeting management approach, including the items listed below.

Agendas. To ensure productive meetings, detailed agendas with timelines for topics and supporting material should be distributed at least three business days before the IPT meeting ~~3/4~~ NOT during the meeting. Every effort should be made to use electronic media for distribution. It may prove useful for the PD/PM and the IPT to jointly prepare the agenda to ensure all concerns are addressed.

Frequency of Meetings. Once established, IPTs may meet as often as necessary to understand and build project strategies and to resolve issues or produce a specified product. With that focus, the IPT will normally meet for a particular purpose at a scheduled time. It should not meet regularly or continuously in an "update" or oversight role. Advance notice of a meeting should be provided as soon as the date is known, but *at least* two weeks before the initial or kick-off meeting and *at least* three business days before a meeting of an ongoing IPT. Subsequent meetings should be scheduled in association with project completion dates and the resolution of action items from an earlier meeting.

Meeting Summaries. Good meeting summaries should be brief and preclude revisiting previous agreements and wasting the time and resources of the team members. Meeting summaries should:

- Record attendance
- Document any decisions or agreements reached by the IPT
- Document action items and operations
- Set the agenda for the next meeting
- Frame issues for higher-level resolution

Draft meeting summaries should be provided to IPT members within one working day of a meeting. The final summary should be provided to all members within two working days after the deadline for the receipt of comments.

6.2 Best Practices Checklists

Open Discussions with No Secrets

Do:

- ☒ Engage all members in the IPT process by soliciting inputs and applying active listening skills
 - ☒ Know team members' preferred methods of communication, and thoroughly understand their organizational roles and operating environments
 - ☒ Trust and accept each person's expertise and advice
 - ☒ State the extent of your authority/empowerment, and immediately identify issues which are beyond established limits
 - ☒ Establish and stick to the meeting agenda. Establish operating procedures that allow any team member to redirect side issues to other forums
 - ☒ Take the necessary time to prepare for the meeting in advance. Conduct research, and pre-meeting coordination necessary to optimize the time used in a group session
- ☒ State individual positions. Openly discuss, resolve and, when required, elevate issues

Don't:

- ⊗ Personalize organizational positions
- ⊗ Isolate people. IPTs are only effective when all team members are participating
- ⊗ Leave issues unaddressed. Unaddressed issues tend to resurface at higher levels and often drive major rework
- ⊗ Forget to document actions/decisions. Documentation provides team members an opportunity clarify issues and a historical record of decision

Empowered, Qualified Team Members**Do:*****Principals:***

- ☑ Ensure IPT members are well-versed in the mission and organization of the functional areas they represent
- ☑ Provide guidance, direction, and extent of authority to the members
- ☑ Provide professional education and training on a regular basis to ensure individuals are qualified members

IPT members:

- ☑ Be trained in the operation of effective IPTs
- ☑ Communicate on a regular basis with their principal
- ☑ Inform the IPT of any limitations on their authority (empowerment) or on their ability to support the team's effort

Don't:

- ⊗ Conduct a briefing cycle separate from the overall IPT process
- ⊗ Overturn decisions made by empowered team members when those team members acted within their delegated authority

Dedicated/Committed Proactive Participation**Do:**

- ☑ Commit to the objectives of the IPT
- ☑ Represent functional area without bias
- ☑ Actively seek and receive input of others
- ☑ Come prepared

Don't:

- ⊗ Bring a personal agenda/negative attitude to the IPT
- ⊗ Bring additional support staff
- ⊗ Skip meetings

Issues Raised and Resolved Early

Do:

- ☒ Ensure structure is in place to identify issues (e.g., dedicate a portion of each meeting to raising / discussing issues)
- ☒ Attempt to resolve issues within the IPT. When issues cannot be resolved, provide a complete description of the pros and cons of unresolved issues to decision makers
- ☒ Quickly elevate unresolved issues that are impeding progress
- ☒ Ensure necessary functional responsibilities are represented

Don't:

- ☐ Raise issues outside the IPT process (i.e., no end runs)

Charter and Initiation

Do:

Charter:

- ☒ Obtain Senior Management agreement on charter objectives
- ☒ Ensure adequate resources are available (money, time and people)
- ☒ Ensure charter goals, objectives, and schedules are realistic

Initiation:

- ☒ Organize the IPT as soon as possible following charter sign-off
- ☒ Ensure IPT agreement and understanding of charter
- ☒ Ensure IPT members are trained

Don't:

Charter

- ☐ Proceed without a written charter and resources established
- ☐ Make the charter too complicated

Initiation:

- ☐ Allow the IPT process to be cumbersome and unfocused
- ☐ Discourage member participation

Goal Alignment

Do:

- ☒ Develop approach(s) to provide feedback to team members and their home organizations
- ☒ Communicate this approach to the team and consistently apply

- ☒ Recognize contributions of team members

Don't:

- ☐ Ignore sub par performance

6.3 Meeting Management Checklist

Meeting Preparation

To what extent are:

- ☒ Inputs solicited
- ☒ Agendas established
- ☒ Information packages dispersed

Opening the Meeting

To what extent does the PD/PM:

- ☒ Establish purpose
- ☒ Assign recorder
- ☒ Set ground rules
- ☒ Establish desired outcome

Conducting the Meeting

To what extent does the PD/PM:

- ☒ Apply do's and don'ts

Concluding the Meeting

To what extent does the PD/PM:

- ☒ Summarize Actions
- ☒ Assign OPRs/Suspense
Dates/Disposition
- ☒ Agree on outline of meeting
summary
- ☒ Pre-set issues for next meeting

6.4 Evaluating the Meeting

To what extent do Team members:

- ☒ Fully and freely participate in IPTs
- ☒ Engage in open, frank, and forthright discussions
- ☒ Come prepared
- ☒ Leave the meeting ready to discuss/address the results with their organizations

Ask to what extent:

- ☒ Is there consistent IPT participation by primary functional area members
- ☒ Are member positions on issues known
- ☒ Are positions revised by a functional area superior

Ask to what extent are:

- ☒ Team and team member performances assessed
Potential Metric: Trend analysis of functional area issue resolution and team member performance through action item records/meeting minutes
- ☒ Consistent representation from functional areas available
Potential Metric: Record attendance

To what extent do:

- ☒ Surprises arise from upper level management
- ☒ Issues get resolved at IPT level
- ☒ Issues get elevated beyond IPT
- ☒ Unresolved issues affect the Plan of Action and milestones

6.5 Effective Characteristics of IPT Participants

— *Effective Leaders have the ability to:*

- Allocate and manage resources
- Organize work structures
- Organize team structures
- Apply effective time management
- Focus group on key issues and maintain the deliverables perspective
- Accept and manage risk
- Make tough, courageous decisions
- Keep discussions to the main points
- Formulate a vision, motivate employees, provide incentives, inspire
- Communicate with senior executives, team members and other stakeholders
- Articulate complex issues into simpler models
- Understand the acquisition process
- Negotiate to win-win outcomes

— *Effective Team Members have the ability to:*

- Work in a team environment
- Motivate other team members
- Articulate their issues (thoughts) clearly and completely
- Understand the user environment and operational culture
- Apply the acquisition process
- Respond effectively to assignments and milestones
- Understand the limits of empowerment
- Apply the IPT rules and procedures
- Contribute functional area expertise
- Understand the impacts of tradeoffs among alternatives
- Communicate with functional sponsors, team leaders and teammates

— *Effective Executive Sponsors have the ability to:*

- Develop a strategic vision of the need for and the role of an IPT
- Communicate mission to team leaders and other sponsors
- Set priorities for the team
- Provide required resources
- Clarify issues and resolve conflicts among team leaders
- Carry IPT issues to other stakeholders for resolution
- Support the IPT

6.6 IPT Skill and Knowledge Requirements

Technical Knowledge

- Functional area expertise
- Analysis of cost and risk tradeoffs
- Analytical and technical skills
- Knowledge of the applicable statutes
- Knowledge of the acquisition process
- Organizational budget process
- Project management software
- Resource management
- Human resource requirements
- Personnel and financial organizational knowledge

Acquisition Process

- Knowledge of the applicable statutes
- Knowledge of the acquisition rules
- Knowledge of the organization mission and purpose
- Big picture vision

Teaming

- Team building skills
- IPT rules and procedures
- Group dynamics
- Facilitation skills
- Team decision making

Management and Meeting

- Leadership
- Supervisory skills
- Ethics
- Meeting and management skills
- Plan of action and milestones skills
- Dedication, commitment and judgment

Conflict Resolution

- Coaching/mentoring
- Consensus building
- Issue resolution/problem-solving skills
- Conflict resolution
- Organization skills
- Interpersonal skills
- Negotiating skills

Planning and Thinking Skills

- Ability to organize complex issues in a clear concise manner
- Time management skills
- Planning skills
- In-depth knowledge of team chartering process
- Strategic planning skills
- Meeting management skills

Communications

- Common goal setting
- Effective writing techniques

7.0 LESSONS-LEARNED FROM HIGH-PERFORMANCE INTEGRATED PROJECT TEAMS

Experience-to-date with the IPT concept suggests a few common characteristics of successful IPTs.

- Each team should have clearly defined roles and responsibilities, product interfaces, decision authority and resources with which to execute its task.
- Each team should establish metrics appropriate to the task and measure progress accordingly.
- A process for conflict resolution should be established at the start of the effort, and contentious issues raised and addressed early.
- Members should respect the views and contributions of others, and accomplish their objectives through continuous team building.
- Team members should be well-trained technical experts empowered to represent their respective competencies.
- Using their expertise, members should recognize that they are collectively and individually accountable for their products (as opposed to simply expending effort or enforcing compliance with processes or standards).
- Internal and external reporting relationships and processes are established to keep all involved stakeholders and customers informed of status, progress, and issues.
- The key to achieving a high-performance IPT is thorough planning, proper allocation of resources, availability of efficient processes, and most of all, training of team members. These are the mutual responsibilities of the Acquisition Executive/PD/PM and the functional leadership.

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